

C:\Program Files\Apache Group\Apache\htdocs\web-inf\classes\

Even though Apache and the Resin are installed into two completely different directories, access to the servlets will be made through the Apache Web Server.

The present invention may be embodied in other specific forms without departing from  
5 its spirit or essential characteristics. The described embodiments are to be considered in all

The present invention may be embodied in other specific forms without departing from  
its spirit or essential characteristics. The described embodiments are to be considered in all  
respects only as illustrative, and not restrictive. The scope of the invention is, therefore,  
indicated by the appended claims, rather than by the foregoing description. All changes which  
10 come within the meaning and range of equivalency of the claims are to be embraced within their  
scope.

What is claimed is:

A copy of the original patent application is available for inspection at the U.S. Patent and Trademark Office, Washington, D.C. 20591.

1. A system for facilitating communications with one or more embedded devices from a client application, said system comprising:

gateway software, said gateway software including:

device communications software, said device communications software comprising instructions for sending and receiving device messages to and from the one or more embedded devices; and

5 gateway communications software, said gateway communications software comprising instructions for sending and receiving communications to other software;

10 server software, said server software including:

user interface software, said user interface software being downloadable by the client application and being usable by the client application to communicate with said server software;

serving software, said serving software responding to requests received from 15 the client application through the user interface software;

gateway communications software, said gateway communications software comprising instructions for sending and receiving communications to said gateway software;

said system operating such that said server software communicates with said gateway 20 software and said gateway software communicates with the one or more embedded devices, said server software operating to send a user interface component to the client application, the client application thereafter using the user interface component to communicate with an embedded device by sending communications to said server software, said server software facilitating communications with the embedded device through said gateway 25 software.

2. The system as defined in claim 1 wherein the server software comprises a web server.

30 3. The system as defined in claim 2 wherein the user interface software comprises instructions written in HTML.

4. The system as defined in claim 2 wherein the user interface software comprises instructions written in HDML.
5. The system as defined in claim 2 wherein the user interface software comprises 5 instructions written in WML.
6. The system as defined in claim 2 wherein the user interface software comprises a Java applet.
- 10 7. The system as defined in claim 6 wherein the serving software comprises a Java servlet.
8. A system for facilitating communications with one or more embedded devices from a client device, said system comprising:  
15 a gateway computer in electronic communication with the one or more embedded devices, said gateway computer running gateway software, said gateway software including:  
device communications software, said device communications software comprising instructions for sending send device messages to the one or more embedded devices and for receiving receive device messages 20 from the one or more embedded devices; and  
gateway communications software, said gateway communications software comprising instructions for sending and receiving communications to other software;  
a server computer in electronic communication with said gateway computer, said 25 server computer being in electronic communication with a computer network for communications with the client device, and said server computer running server software, said server software including:  
user interface software, said user interface software being usable by the client device to communicate with said server software;  
30 serving software, said serving software responding to requests received from the client device through the user interface software;

gateway communications software, said gateway communications software comprising instructions for sending and receiving communications to said gateway software;

said system operating such that said server computer communicates with said gateway  
5 computer and said gateway computer communicates with the one or more embedded devices, said server computer operating to send a user interface component to the client device, the client device thereafter using the user interface component to communicate with an embedded device by sending communications to said server computer, said server computer facilitating  
10 communications with the embedded device through said gateway computer.

9. The system as defined in claim 8 wherein the server software comprises a web server.
10. The system as defined in claim 9 wherein the user interface software comprises  
15 instructions written in HTML.
11. The system as defined in claim 9 wherein the user interface software comprises instructions written in HDML.
- 20 12. The system as defined in claim 9 wherein the user interface software comprises instructions written in WML.
13. The system as defined in claim 9 wherein the user interface software comprises a Java applet.
- 25 14. The system as defined in claim 9 wherein the serving software comprises a Java servlet.

15. A system for facilitating communications with one or more embedded devices from a client application, said system comprising:

a gateway server computer in electronic communication with the one or more embedded devices, said gateway-server computer running gateway software, said gateway software including:

5 device communications software, said device communications software comprising instructions for sending send device messages to the one or more embedded devices and for receiving receive device messages from the one or more embedded devices; and

10 gateway communications software, said gateway communications software comprising instructions for sending and receiving communications to other software;

15 said gateway server computer running server software, said server software including:  
user interface software, said user interface software being usable by the client application to communicate with said server software;  
serving software, said serving software responding to requests received from the client application through the user interface software;  
gateway communications software, said gateway communications software comprising instructions for sending and receiving communications to other software,

20 said system operating such that said server software communicates with said gateway software and said gateway software communicates with the one or more embedded devices, said server software operating to send a user interface component to the client application, the client application thereafter using the user interface component to communicate with an embedded device by sending communications to said server software, said server software facilitating communications with the embedded device through said gateway software.

25 16. The system as defined in claim 15 wherein the server software comprises a web server.

30 17. The system as defined in claim 16 wherein the user interface software comprises instructions written in a mark-up language.

18. The system as defined in claim 16 wherein the user interface software comprises a Java applet.

19. The system as defined in claim 18 wherein the serving software comprises a Java servlet.